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| 09/555,816 | 10/10/2000 | Tomas Nordstrom | 192538US2PCT | 9460 |

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09/30/2003

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EXAMINER

HOFFMAN, BRANDON S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2171

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/555,816

Applicant(s)

NORDSTROM ET AL.

Examiner

Brandon Hoffman

Art Unit

2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of a certified copy of the Sweden 9704497-8 (December 3, 1997) application referred to in the oath or declaration or in an application data sheet. If this copy is being filed to obtain the benefits of the foreign filing date under 35 U.S.C. 119(a)-(d), applicant should also file a claim for such priority as required by 35 U.S.C. 119(b). If the application being examined is an original application filed under 35 U.S.C. 111(a) (other than a design application) on or after November 29, 2000, the claim for priority must be presented during the pendency of the application, and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior foreign application. See 37 CFR 1.55(a)(1)(i). If the application being examined has entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the claim for priority must be made during the pendency of the application and within the time limit set forth in the PCT and Regulations of the PCT. See 37 CFR 1.55(a)(1)(ii). Any claim for priority under 35 U.S.C. 119(a)-(d) or (f) or 365(a) or (b) not presented within the time period set forth in 37 CFR 1.55(a)(1) is considered to have been waived. If a claim for foreign priority is presented after the time period set forth in 37 CFR 1.55(a)(1), the claim may be accepted if the claim properly identifies the prior foreign application and is accompanied by a grantable petition to accept an unintentionally delayed claim for priority. See 37 CFR 1.55(c).

Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 371 based upon an application filed in Sweden on December 3, 1997. A claim for priority under 35 U.S.C. 371 cannot be based on said application, since the United States application was filed more than thirty months thereafter (twelve months from Sweden application to the PCT and eighteen months from the PCT to the U.S. application). This makes the effective filing date for the United States filed application October 10, 2000.

Specification

2. The disclosure is objected to because of the following informalities:

- On page 2, line 18, "provide" should be ~~provided~~.
- On page 3, line 20, "mean" should be ~~means~~.
- On page 5, line 24, "receiver" should be ~~transmitter~~.

Appropriate correction is required.

Claim Objections

3. Claims 10-13 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2171

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-23 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nordstrom et al.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 4-6, 8-11, 13-15, 17-19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannering et al. (U.S. Patent No. 6,137,839) in view of Kloker (U.S. Patent No. 4,539,684).

Regarding claims 1, 5, 14, and 18, Mannering et al. teaches:

- A multi-carrier transmission system that contains, on the transmitter side, an IFFT, parallel to serial converter, and a digital to analog converter; and on the receiving side, an analog to digital converter, serial to parallel converter, and a FFT (figure 4a). These parts of the multi-carrier transmission system exist in the teaching of Mannering et al. and are the same pieces in applicants drawing as to what a multi-carrier transmission system entails.

Mannering et al. does not teach:

- A data scrambler,
- Characterized in that combiner means are provided to combine user data with frame synchronization data.

Kloker teaches:

- A data scrambler (figure 3),
- Characterized in that combiner means (figure 3, reference number 28) are provided to combine user data (figure 3, reference 'Input Data Sequence') with frame synchronization data (figure 3, reference number 26).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the data scrambler, as taught by Kloker to the multi-carrier transmission system of Mannering et al. It would have been obvious for this combination because a data scrambler incorporated into a multi-carrier transmission system that uses the sync bits as part of the scrambling minimizes the size of the transmission data (see column 1, lines 39-46 of Kloker).

Regarding claims 5 and 18 specifically, **official notice** is taken that it is well known in the art of scrambling that the process performed on the scrambling side (transmitting side) is the reverse process of that performed on the descrambling side (receiving side). With that said, claims 5 and 18 are rejected based on the well know fact that scrambling and descrambling are mirrored processes of each other.

Regarding claims 2, 6, 15, and 19, Mannering et al. as modified by Kloker teaches the combiner means has a XOR function (see figure 3, reference number 26 of Kloker).

Regarding claims 4, 8, 17, and 21, Mannering et al. as modified by Kloker teaches said combiner means is adapted to combine said user data with the two most significant bits of a synchronization frame (see figure 3 of Kloker).

Although Kloker does not teach combining the first two significant bits of a synchronization frame with user data, it is a mere choice of the applicant to choose these specific bits. In operation, the choice of any combination of bits of the synchronization frame for scrambling would produce similar results.

Regarding claims 9 and 10, Mannering et al. as modified by Kloker teaches:

- A data scrambler attached to the transmitter of a multi-carrier transmission system (see figure 3 of Kloker), and
- A data descrambler attached to the receiver of a multi-carrier transmission system (see figure 3 of Kloker). Again, as with the rejection of claims 5 and 18, **official notice** is taken that the descrambling process is the mirrored process of the scrambling side.

Regarding claims 11 and 22, Mannering et al. as modified by Kloker teaches the multi-carrier transmission system employs DMT (see figure 4a and column 3, lines 3-10 and Table 2 of Mannering et al.).

Regarding claim 13, Mannering et al. as modified by Kloker teaches a means for transmitting frame synchronization data from said data scrambler to said data descrambler (see figure 3 of Kloker).

The transmission system of Mannering et al. as modified by Kloker includes a scrambler and descrambler. Kloker teaches, in claim 1, that the synchronization data is combined with user data during scrambling to be transmitted from transmitter to receiver. During descrambling, on the receiver side, the synchronization data is returned to an unscrambled state, thus transmitting synchronization data from scrambler to descrambler.

Claims 3, 7, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannering et al. as modified by Kloker, in view of Salava (U.S. Patent No. 3,586,776).

Mannering et al. as modified by Kloker, in view of Salava teaches the frame synchronization data is pseudo random (see figure 1 and column 1, line 74 through column 2, line 14 of Salava).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use pseudo random synchronization data, as taught by Salava to the data scrambler of Mannering et al. as modified by Kloker. It would have been obvious for this combination because pseudo random synchronization data incorporated into a data scrambler gives the randomness needed when scrambling data for secure transmission (see column 1, lines 7-31 of Salava).

Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannering et al. as modified by Kloker, in view of Humphrey et al. (U.S. Patent No. 5,959,967).

Mannering et al. as modified by Kloker in view of Humphrey et al. teaches the multi-carrier transmission system employs OFDM (see figure 1, reference number 3 of Humphrey et al.).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ OFDM, as taught by Humphrey to the multi-carrier transmission system of Mannering et al. as modified by Kloker. It would have been obvious for this combination because OFDM incorporated into a multi-carrier transmission system allows a more cost effective approach for handling digital data over older lines without the need to replace them with newer, faster coaxial cables or the like (see column 1, lines 8-25 of Humphrey).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon Hoffman whose telephone number is 703-305-4662. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Brandon Hoffman

BH
9/15/03


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